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**Types of Al alloys in automobiles**

*Where are they used?*

* Power-train
* Engine (piston, cylinder head, cylinder linings, cylinder block)
* Fuel System (fuel filler pipe, fuel tank)
* Liquid Lines
* Heat exchanger (radiator, oil cooler)
* Chassis (axle, cradle)
* Wheel
* Suspension arm/column
* Steering system
* **Car Body**
* **Body-In-White "BIW"**
* **Hoods/bonnets**
* **Doors**
* **Wings**
* **Bumper beams**
* **Interiors**

*What is their composition?*

* Non-heat treatable Al alloys (Al-Mg)-5xxx series
* Have been optimized strength and corrosion resistance in use of chassis
* Needed to be improved: corrosion resistance, thermal stability, surface appearance
* Heat treatable Al alloys (Al-Mg-Si)-6xxx series
* AA6016 (Europe)
* AA6111 (America)
* AA6181A (recycling aspect)
* 6016
* Have been improved formability, surface appearance and age hardening response

*How are they strengthened?*

* 5xxx series Al alloys
* Work hardening
* Solution hardening
* 6xxx series Al alloys
* Age hardening